

Appendix B

Meteorological Data

This section contains meteorological data derived from various regulatory and non-regulatory sites. The data provides a comparative analysis of winds speed, wind direction, wind gusts and concentration data. Please note that meteorological instruments measure at different heights, and at different time intervals. By taking the actual time of measurement and assuring that all data represented is in Pacific Standard Time (PST) there is uniformity of the data. In addition, not all stations measure at the exact same time, i.e. measurements at 053 and 056 therefore, comparisons are measurements within a 60-minute period. While there may be some overlapping and slight differences the comparative analysis provides the reader with a better understanding of the regional effect of the Exceptional Event.

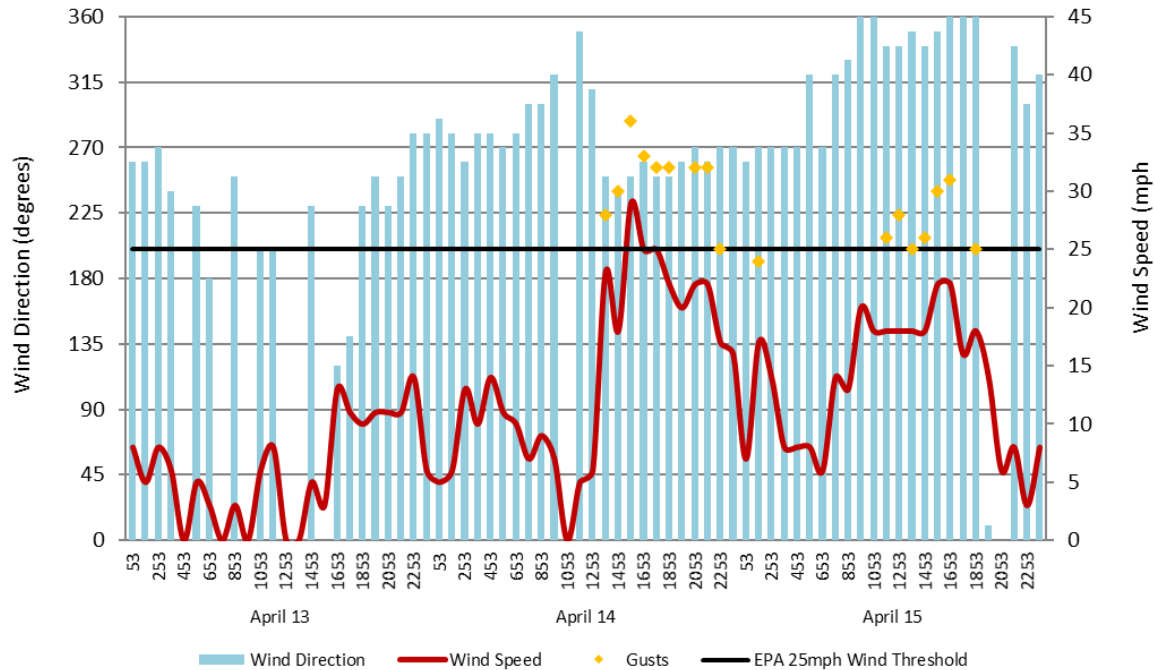
FIGURE B-1
POTENTIAL METEOROLOGICAL SITES USED IN EXCEPTIONAL EVENT DOCUMENTS



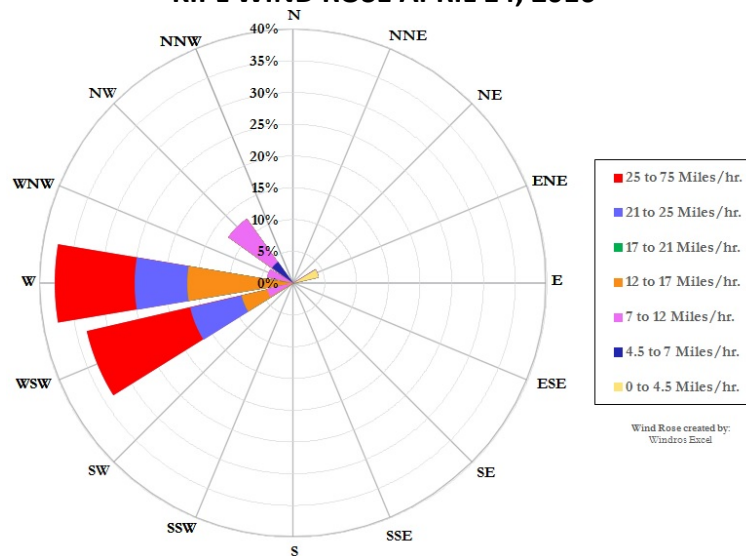
Fig B-1: Depicts all the sites from which the ICAPCD may potentially access meteorological data. Base map and larger locator map from Google Earth

**IMPERIAL COUNTY SITES
B-2 THROUGH B-9**

**FIGURE B-2
IMPERIAL COUNTY AIRPORT (KIPL)
WIND SPEED, GUSTS & DIRECTION**



**FIGURE B-3
KIPL WIND ROSE APRIL 14, 2016**



Figs B-2 & B-3: Imperial Airport (KIPL) meteorological data shows that both winds and gusts exceeded the 25 mph wind threshold. Data from the NCEI's QCLCD system

FIGURE B-4
EL CENTRO NAF (KNJK)
WIND SPEED, GUSTS & DIRECTION

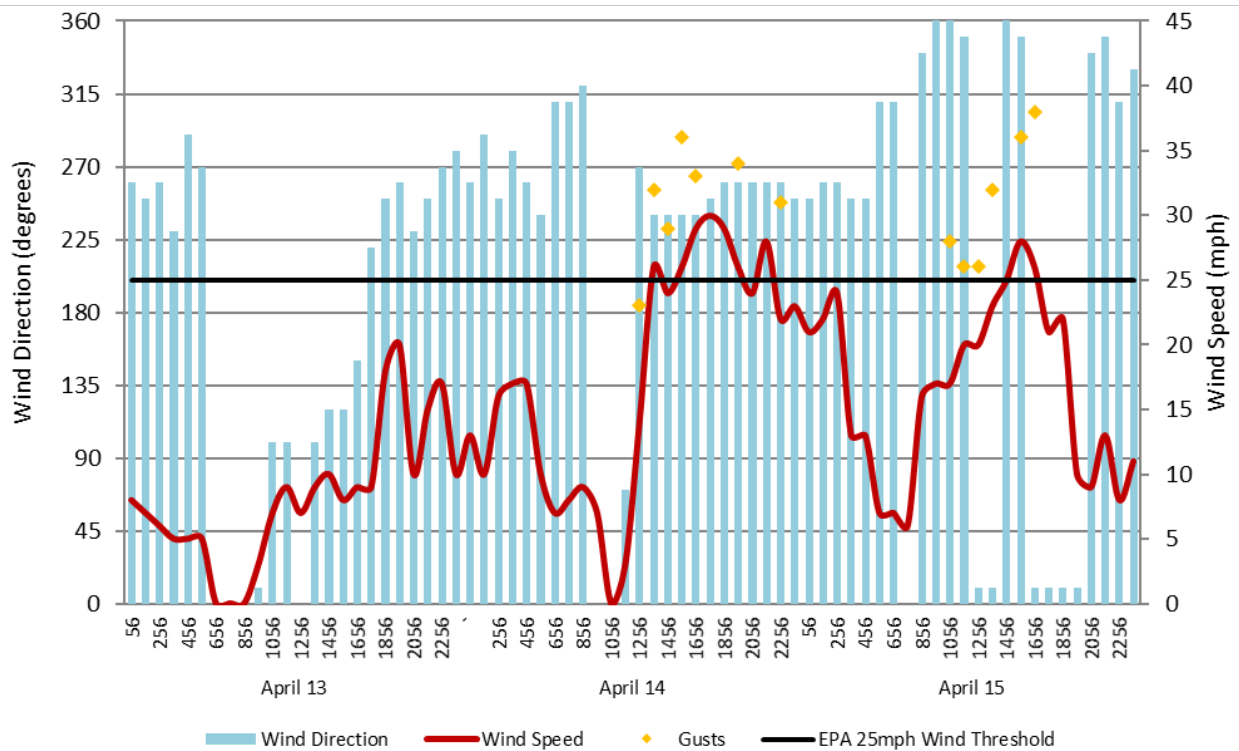
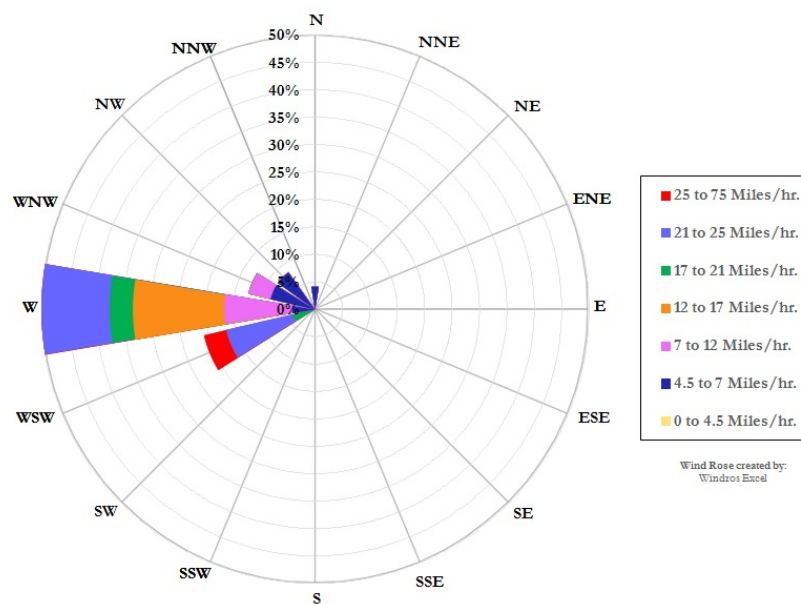


FIGURE B-5
KNJK WIND ROSE APRIL 14, 2016



Figs B-4 & B-5: El Centro NAF (KNJK) meteorological data shows that both winds and gusts exceeded the 25 mph wind threshold. Data from the NCEI's QCLCD system

FIGURE B-6
CALEXICO WIND SPEED & DIRECTION

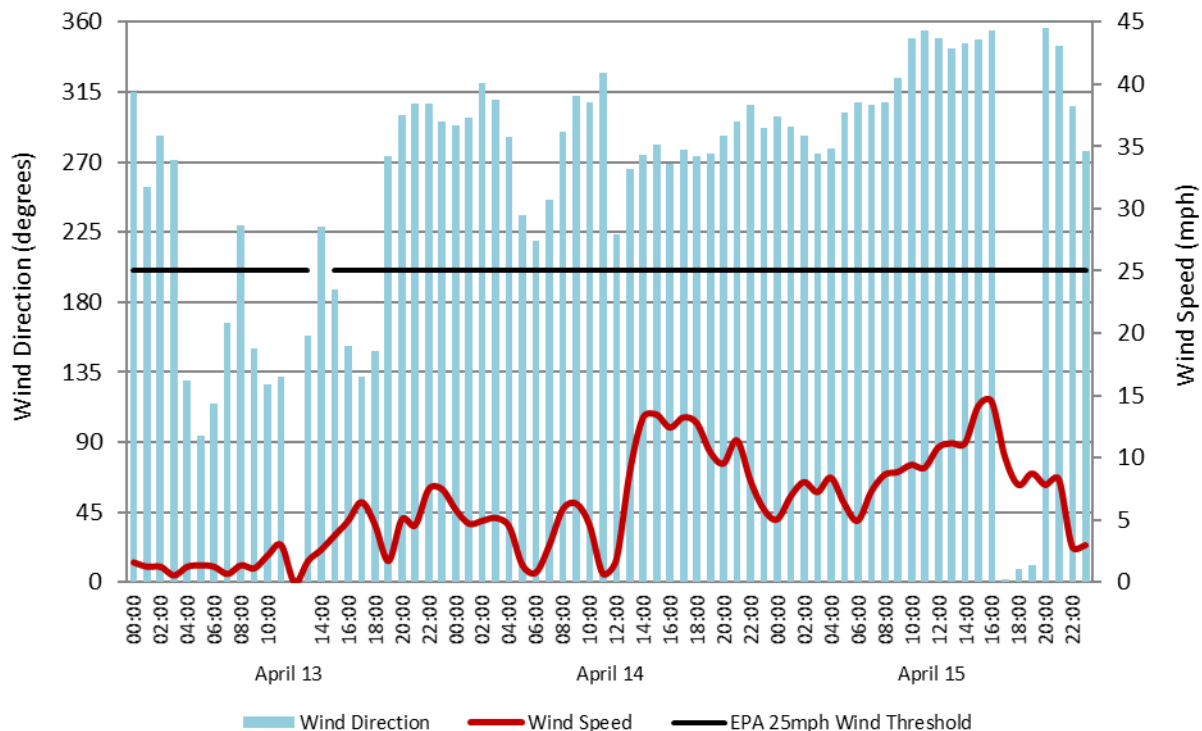
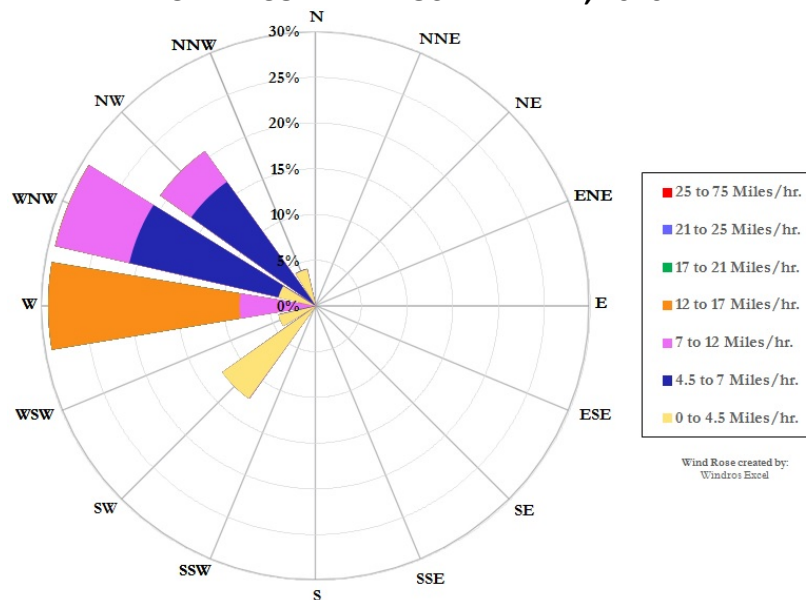


FIGURE B-7
CALEXICO WIND ROSE APRIL 14, 2016



Figs B-6 & B-7: Although winds did not exceed the 25 mph wind threshold at Calexico, which helps account for its lack of exceedance. Data from the EPA's AQS system

FIGURE B-8
EL CENTRO WIND SPEED & DIRECTION

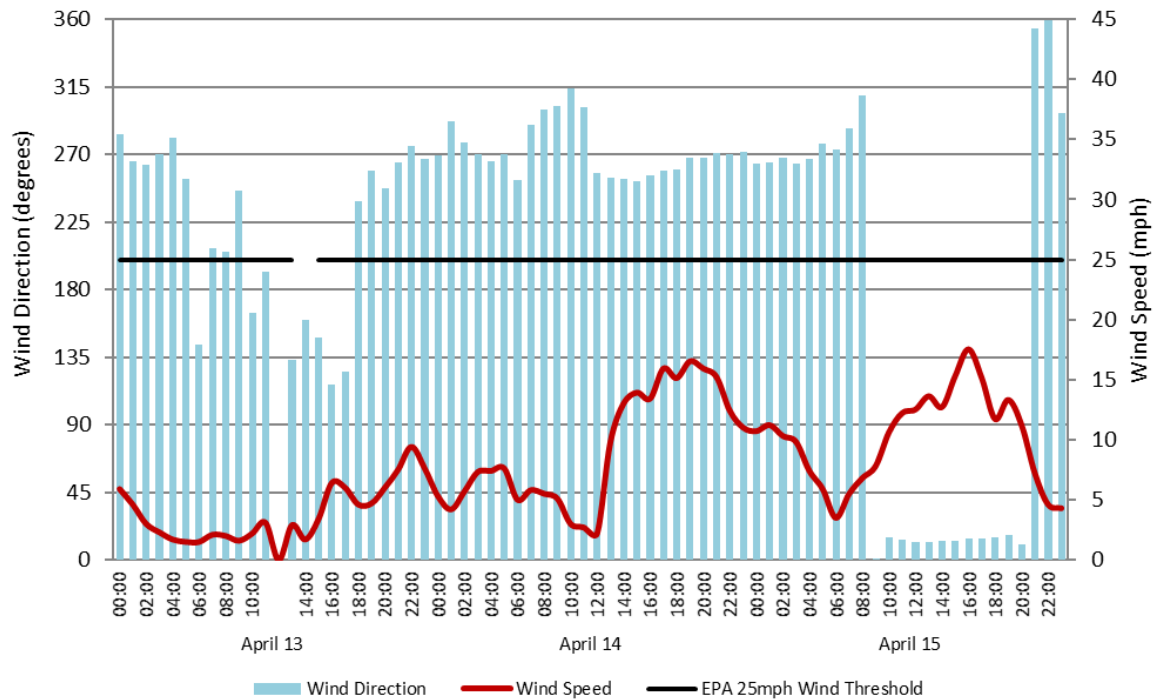
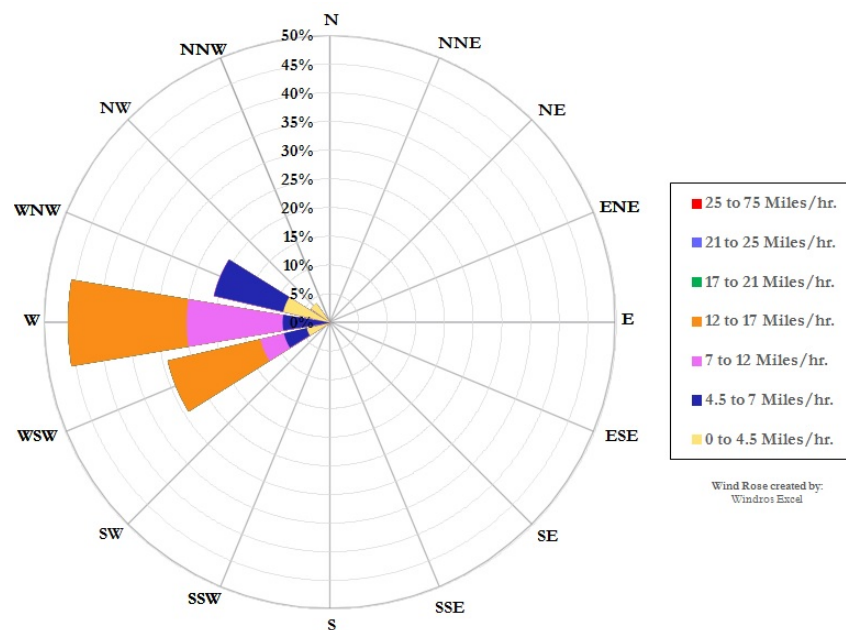


FIGURE B-9
EL CENTRO WIND ROSE APRIL 14, 2016



Figs B-8 & B-9: Winds did not exceed the 25 mph wind threshold at El Centro, which helps account for its lack of exceedance. Data from the EPA's AQS system

FIGURE B-10
NILAND WIND SPEED & DIRECTION

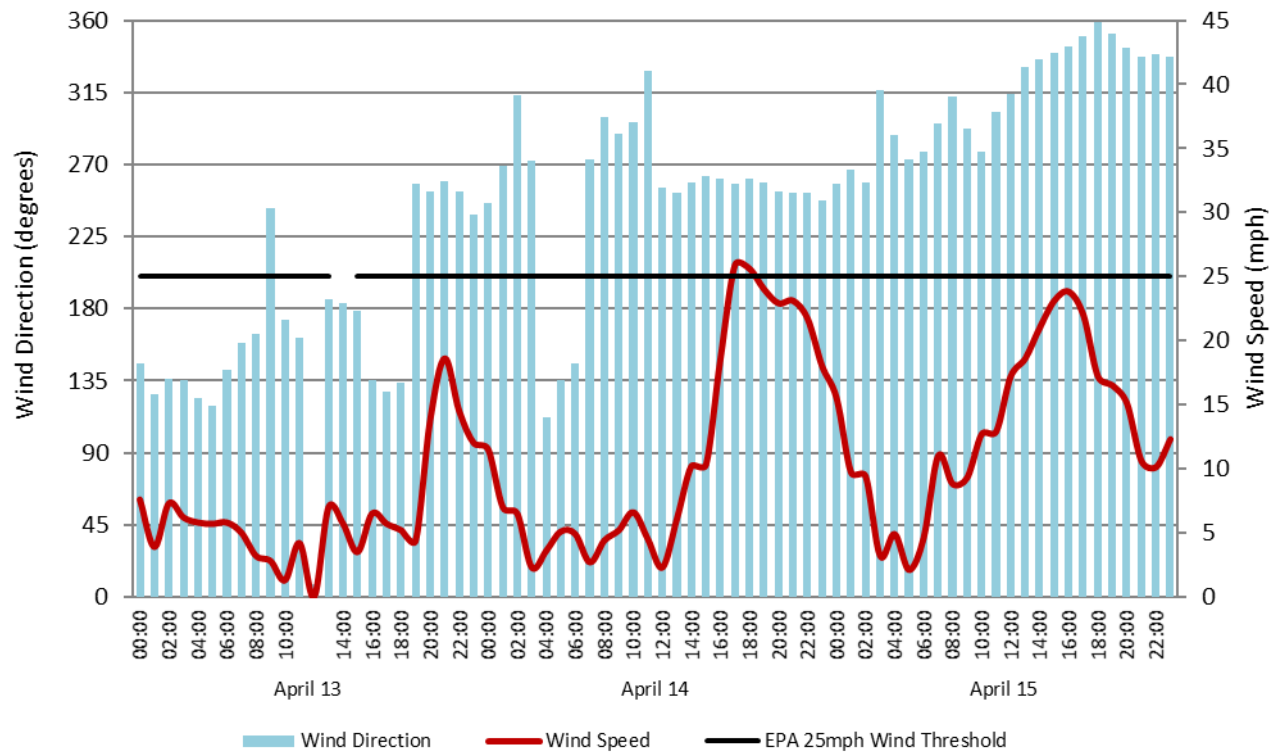
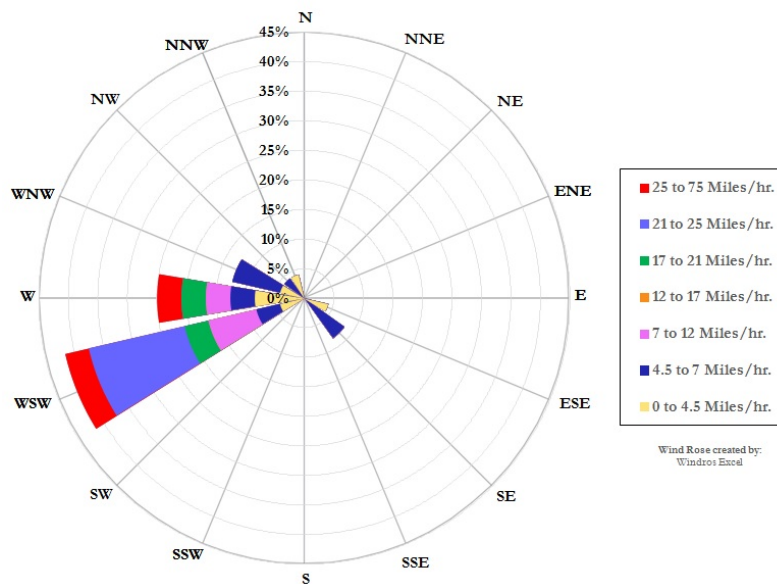


FIGURE B-11
NILAND WIND ROSE APRIL 14, 2016



Figs B-10 & B-11: Winds exceeded the 25 mph wind threshold at Niland, although it avoided an exceedance. Data from the EPA's AQS system

FIGURE B-12
WESTMORLAND WIND SPEED & DIRECTION

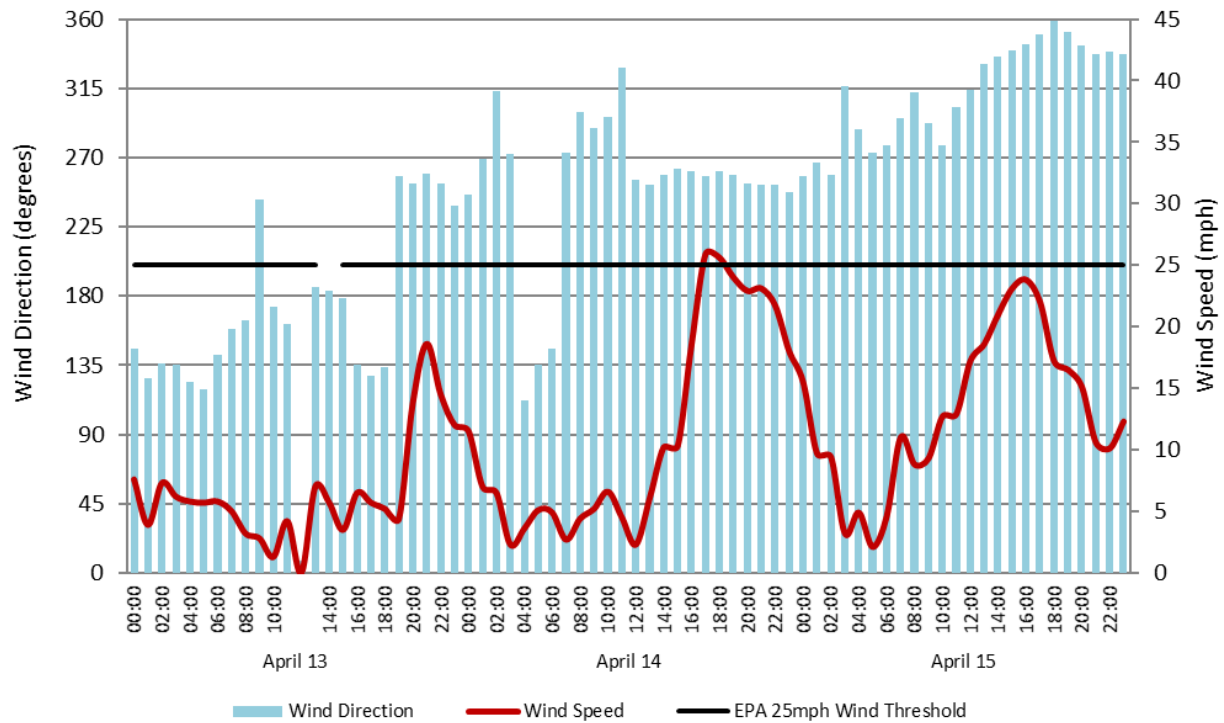
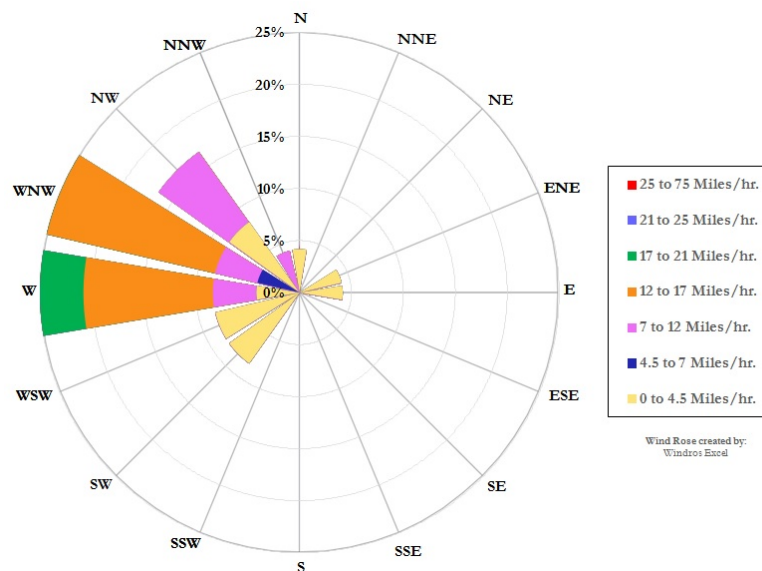


FIGURE B-13
WESTMORLAND WIND ROSE APRIL 14, 2016



Figs B-12 & B-13: Winds did not exceed the 25 mph wind threshold at Westmorland. However, winds were much higher at upstream sites and transported dust downstream. Data from the EPA's AQS system

EASTERN RIVERSIDE COUNTY AIRPORTS

FIGURE B-14
BLYTHE AIRPORT (KBLH)
WIND SPEED, GUSTS & DIRECTION

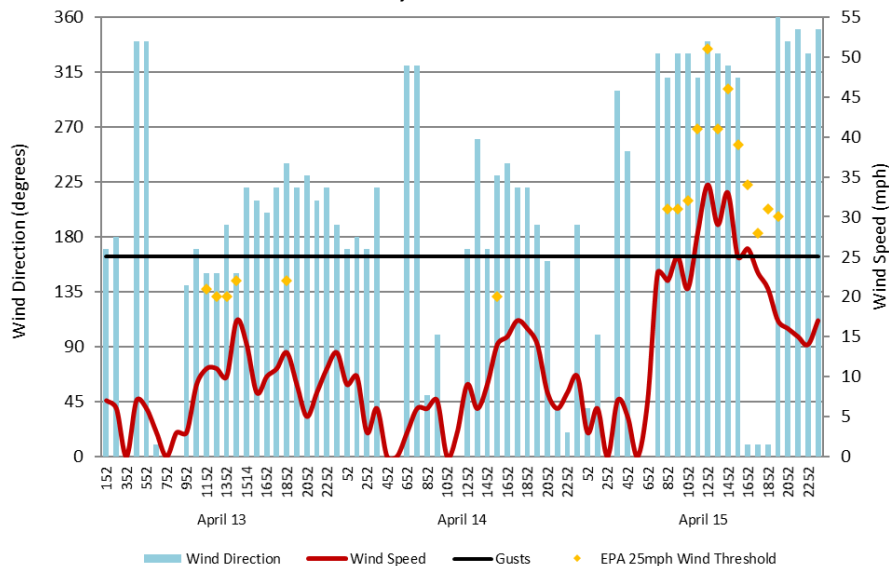


Fig B-14: Winds were less elevated than in Imperial County, but gusts were still strong. Data from the NCEI's QCLCD system

FIGURE B-15
DESERT RESORTS (aka J.COCHRAN-THERMAL) AIRPORT (KTRM)
WIND SPEED, GUSTS & DIRECTION

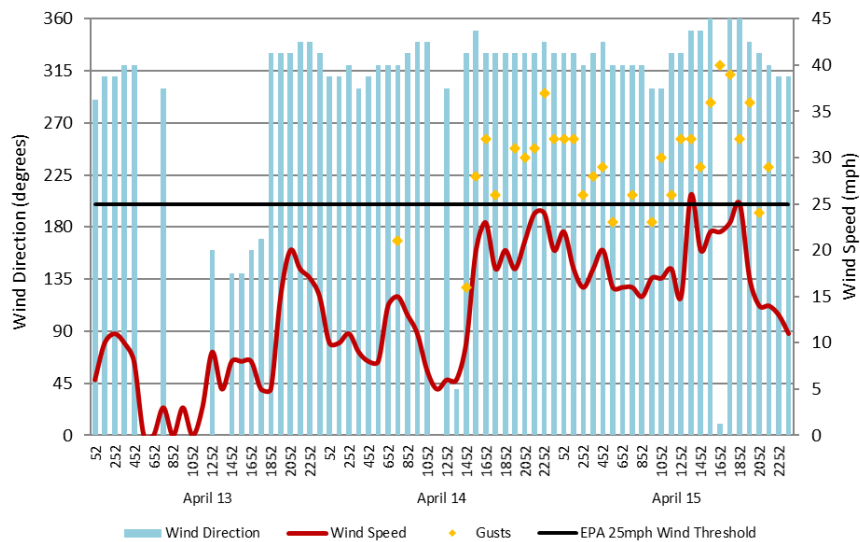


Fig B-15: Winds were less elevated than in Imperial County, but gusts were still strong. Data from the NCEI's QCLCD system

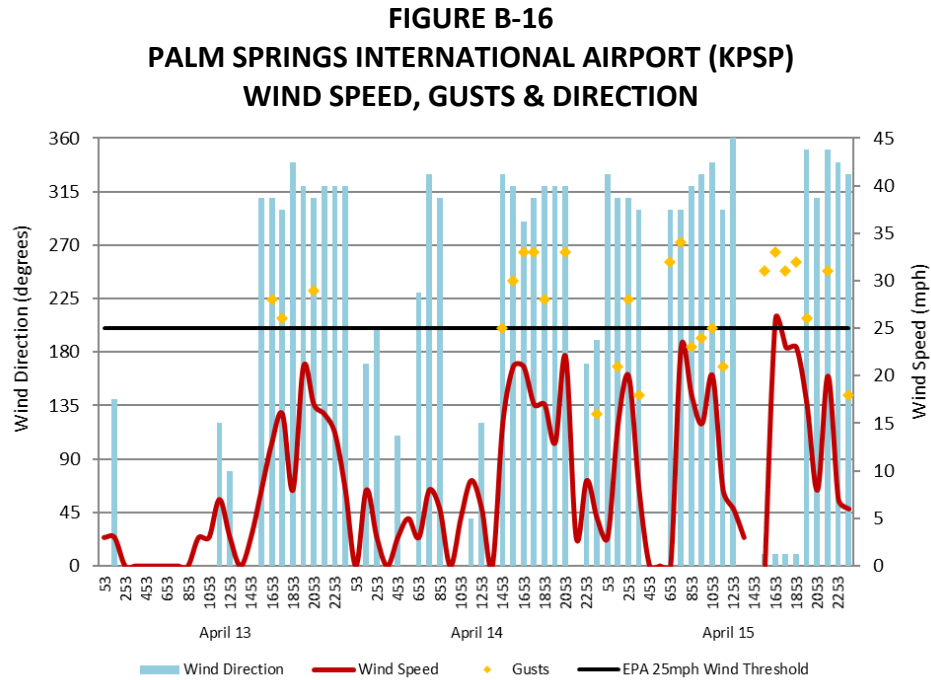


Fig B-16: Winds were less elevated than in Imperial County, but gusts were still strong. Data from the NCEI's QCLCD system

SOUTHEASTERN SAN DIEGO COUNTY

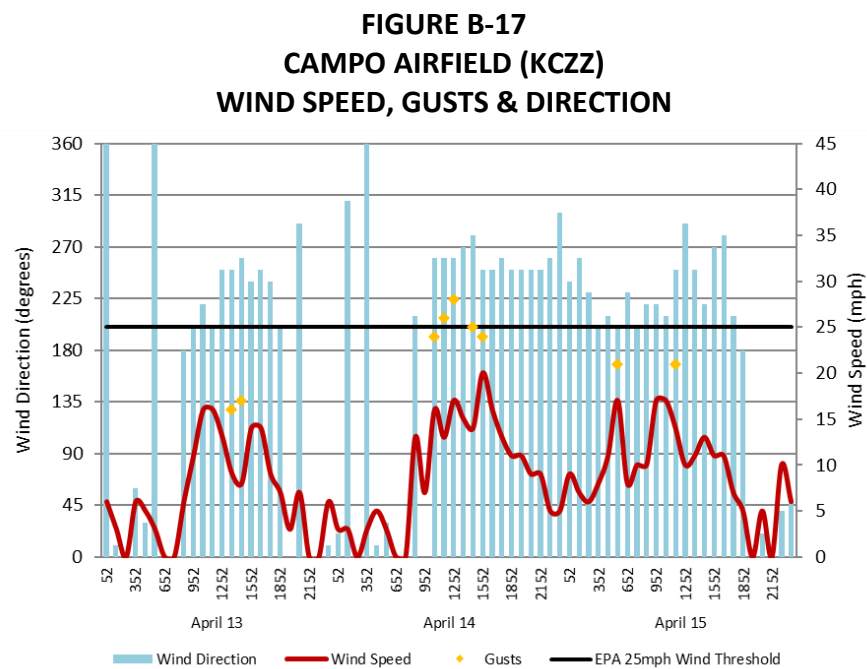


Fig B-17: Winds and gusts at Campo in the mountains were slightly less than the winds measured in Imperial County. Data from the NCEI's QCLCD system

SOUTHWESTERN ARIZONA

FIGURE B-18
YUMA, ARIZONA MCAS (KNYL)
WIND SPEED, GUSTS & DIRECTION

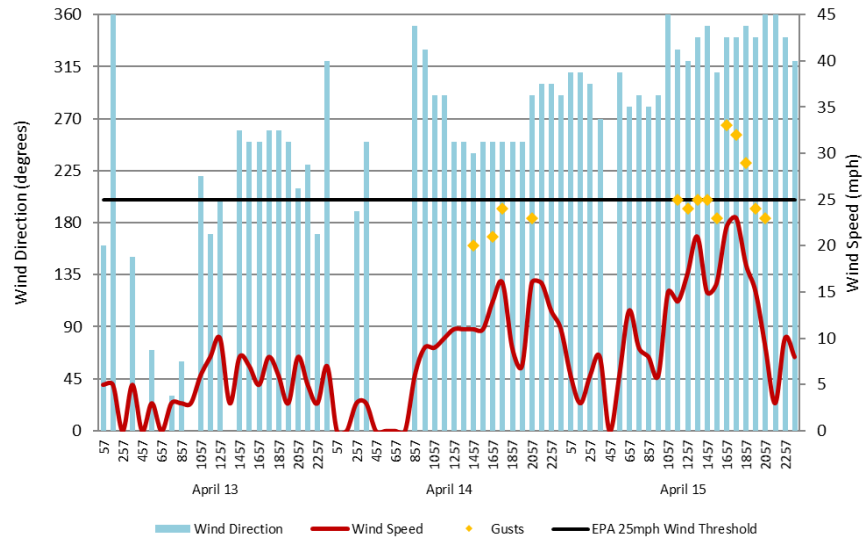


Fig B-18: Winds and gusts at Yuma MCAS were slightly less than the winds measured in Imperial County. Data from the NCEI's QCLCD system

MEXICO

FIGURE B-19
MEXICALI, MEXICO (MMML)
WIND SPEED, GUSTS & DIRECTION

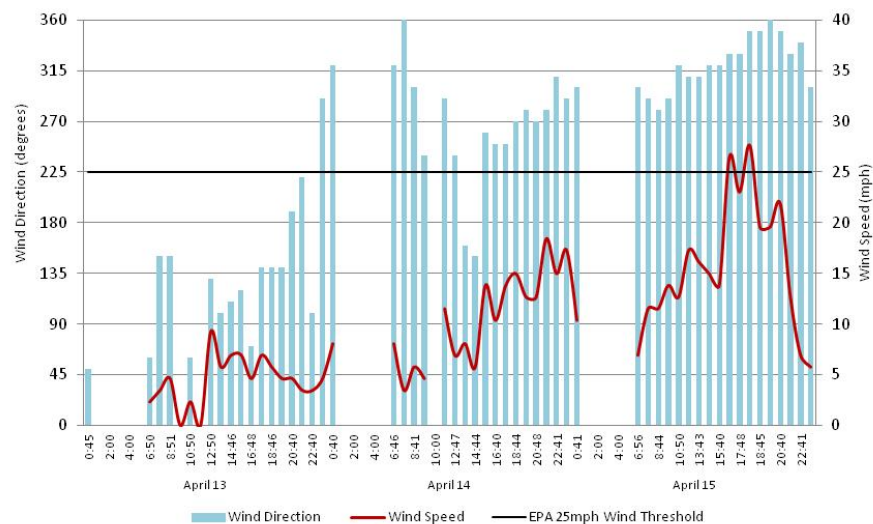


Fig B-19: Winds and gusts at Mexicali Airport were slightly less than the winds measured in Imperial County. Data from the University of Utah's MesoWest system

UPSTREAM SITES

The following graphs provide evidence of the elevated wind speeds and confirm the prevailing wind direction at different sites outside Imperial and Riverside Counties.

FIGURE B-20
SUNRISE-OCOTILLO
WIND SPEED, GUSTS & DIRECTION

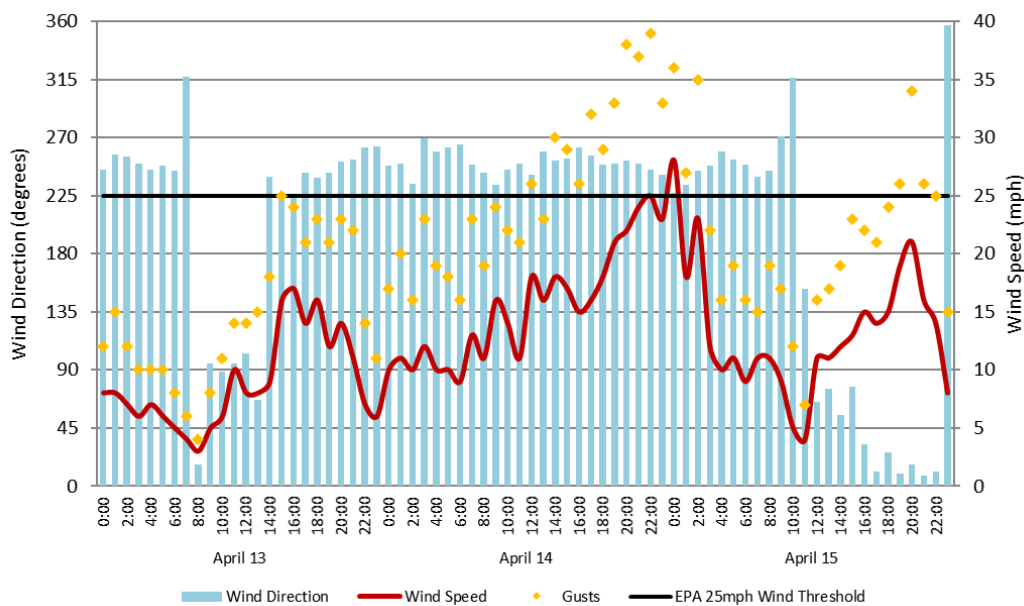
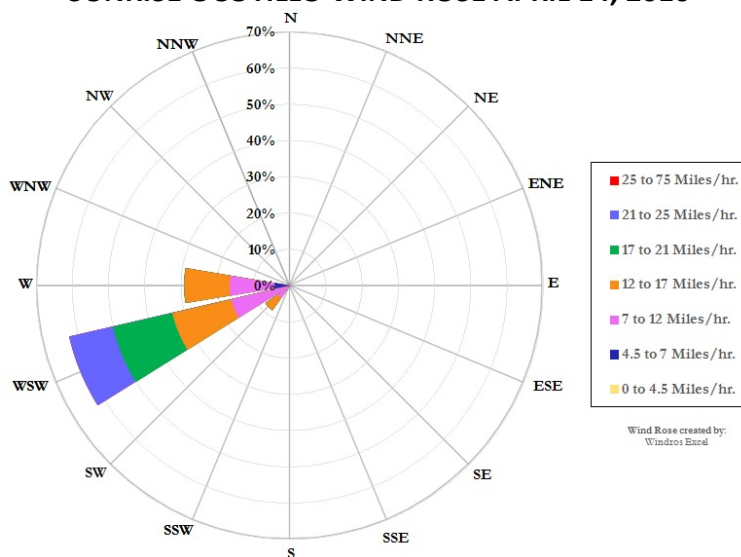


FIGURE B-21
SUNRISE OCOTILLO WIND ROSE APRIL 14, 2016



Figs B-20 & B-21: Winds and gusts at Sunrise-Ocotillo (IMPSD; ele. 695 ft) helped suspend and transport winds. Data from the University of Utah's MesoWest

FIGURE B-22
FISH CREEK MOUNTAINS
WIND SPEED, GUSTS & DIRECTION

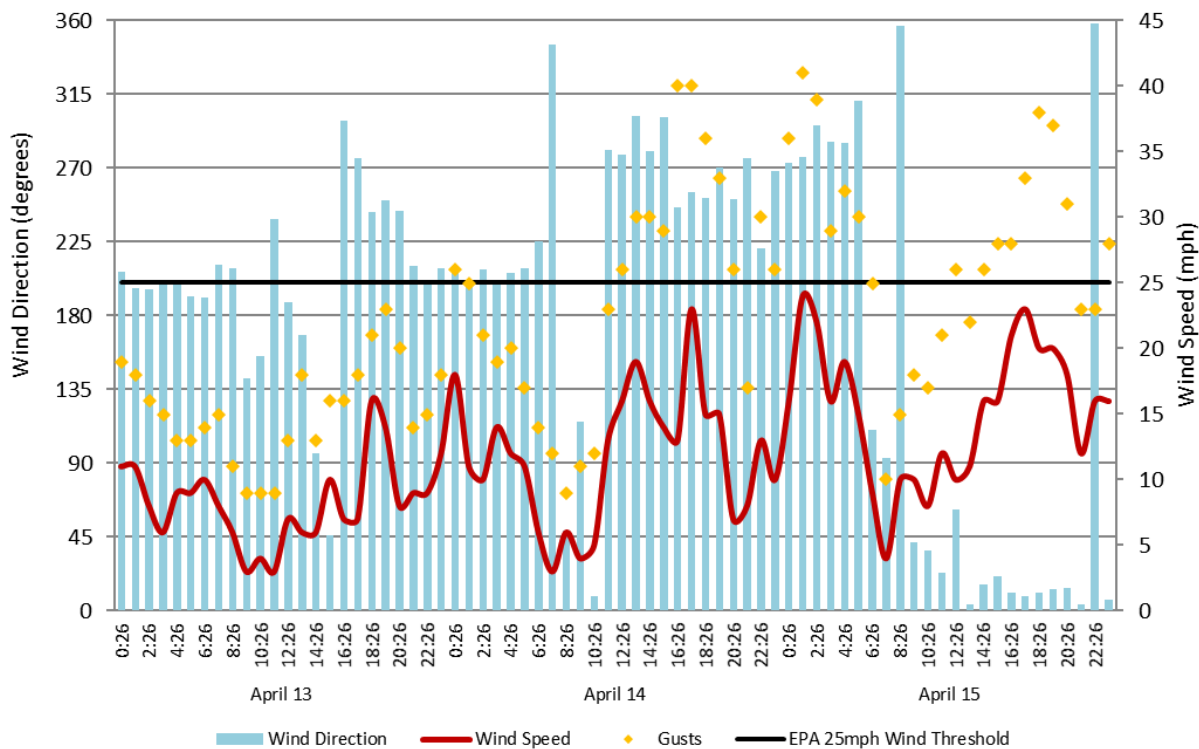
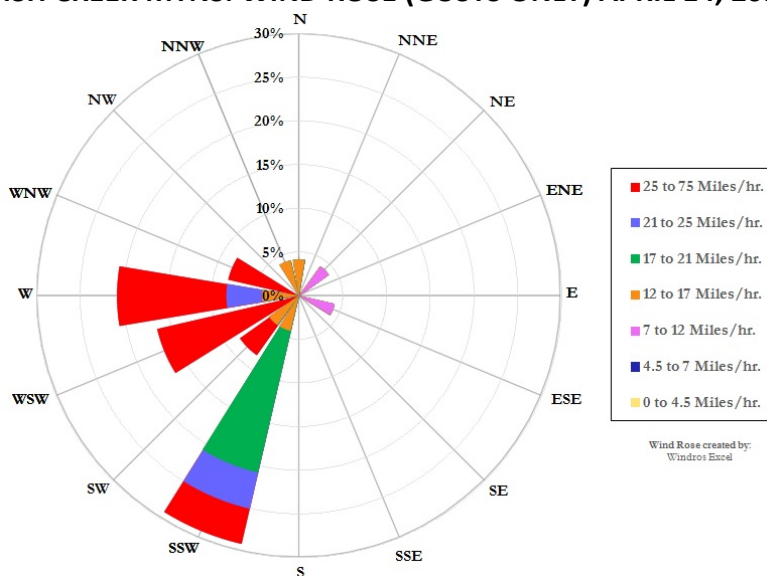


FIGURE B-23
FISH CREEK MTNS. WIND ROSE (GUSTS ONLY) APRIL 14, 2016



Figs B-22 & B-23: Winds at Fish Creek Mountains (FHCC1; elev. 781 ft) did not exceed the 25 mph wind threshold, although gusts did. Wind rose shows gusts only. Data from the University of Utah's MesoWest

FIGURE B-24
OCOTILLO WELLS WIND SPEED, GUSTS & DIRECTION

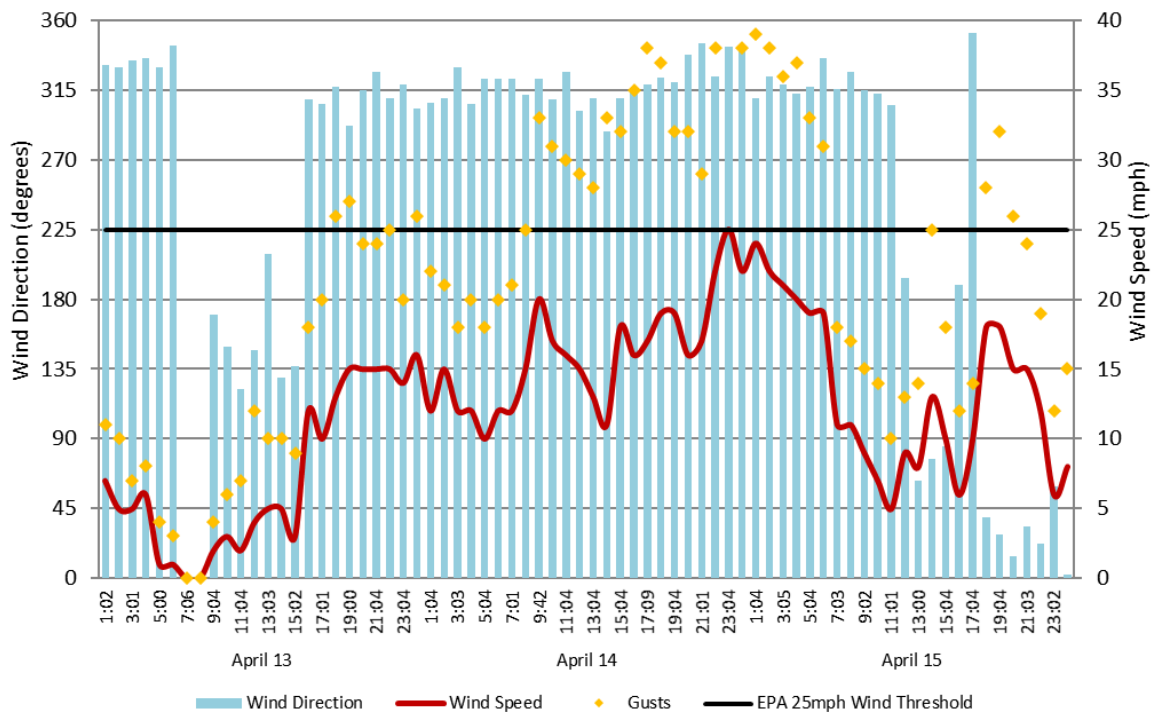
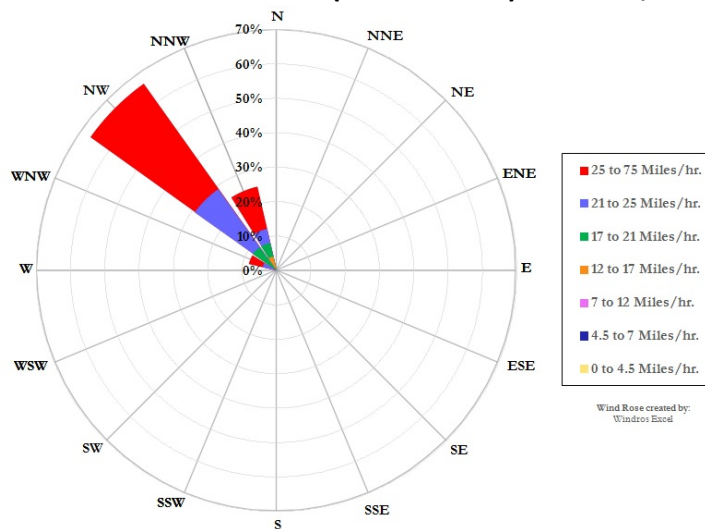


FIGURE B-25
OCOTILLO WELLS WIND ROSE (GUSTS ONLY) APRIL 14, 2016



Figs B-24 & B-25: Winds at Ocotillo Wells (AS938) did not exceed the 25 mph wind threshold, although gusts did. Wind rose shows gusts only. However, the northwesterly influence helped direct suspended dust toward Westmorland and Brawley. Data from the University of Utah's MesoWest

FIGURE B-26 IMPERIAL COUNTY AIRPORT (KIPL) QCLCD DATA

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: -58 ft. Lat: 32.8342° N Lon: -115.5796° W
Station: IMPERIAL CO AIRPORT, CA US WBAN:03144

Local Climatological Data Hourly Observations April 2016

Generated on 05/24/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Visi- bility	Weather Type (see documentation)	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Alti- meter Setting (inHg)
						(F)	(C)	(F)	(C)	(F)	(C)											
14	0053	7	CLR:00	10.00	AU AW MW	66	18.9	57	14.0	44	6.7	45	5	290		29.90	8	+0.02	29.84	FM-15	0.00	29.84
14	0153	7	CLR:00	10.00		67	19.4	58	14.4	42	5.6	41	6	280		29.89			29.83	FM-15	0.00	29.83
14	0253	7	CLR:00	10.00		67	19.4	58	14.4	42	5.6	41	13	260		29.89			29.83	FM-15	0.00	29.83
14	0353	7	CLR:00	10.00		66	18.9	57	13.9	39	3.9	37	10	280		29.87	8	+0.03	29.81	FM-15	0.00	29.81
14	0453	7	CLR:00	10.00		69	20.6	60	15.6	37	2.8	31	14	280		29.87			29.81	FM-15	0.00	29.81
14	0553	7	CLR:00	10.00		67	19.4	58	14.5	36	2.2	32	11	270		29.89			29.83	FM-15	0.00	29.83
14	0653	7	CLR:00	10.00		71	21.7	62	16.7	37	2.8	29	10	280		29.90	3	-0.03	29.85	FM-15	0.00	29.84
14	0753	7	CLR:00	10.00		77	25.0	69	20.7	36	2.2	23	7	300		29.92			29.86	FM-15	0.00	29.86
14	0853	7	CLR:00	10.00		80	26.7	74	23.3	34	1.1	19	9	300		29.91			29.85	FM-15	0.00	29.85
14	0953	7	CLR:00	10.00		83	28.3	74	23.2	45	7.2	26	7	320		29.90	8	+0.00	29.84	FM-15	0.00	29.84
14	1053	7	CLR:00	10.00		84	28.9	79	25.9	36	2.2	18	0	000		29.86			29.80	FM-15	0.00	29.80
14	1153	7	CLR:00	10.00		87	30.6	83	28.1	37	2.8	17	5	350		29.83			29.77	FM-15	0.00	29.77
14	1253	7	CLR:00	10.00		89	31.7	87	30.5	35	1.7	15	6	310		29.80	6	+0.10	29.74	FM-15	0.00	29.74
14	1353	7	CLR:00	10.00		91	32.8	92	33.1	33	0.6	13	23	250	28	29.77			29.71	FM-15	0.00	29.71
14	1453	7	CLR:00	10.00		91	32.8	89	31.9	36	2.2	14	18	240	30	29.75			29.69	FM-15	0.00	29.69
14	1553	7	CLR:00	10.00		87	30.6	82	27.8	38	3.3	18	29	250	36	29.73	6	+0.07	29.67	FM-15	0.00	29.67
14	1653	7	CLR:00	10.00		83	28.3	76	24.6	38	3.3	20	25	260	33	29.73			29.67	FM-15	0.00	29.67
14	1753	7	CLR:00	10.00		77	25.0	68	20.0	40	4.4	26	25	250	32	29.73			29.67	FM-15	0.00	29.67
14	1853	7	CLR:00	10.00		73	22.8	64	17.6	40	4.4	30	22	250	32	29.75	3	-0.02	29.68	FM-15	0.00	29.69
14	1953	7	CLR:00	10.00		71	21.7	62	16.6	39	3.9	31	20	260		29.76			29.70	FM-15	0.00	29.70
14	2053	7	CLR:00	10.00		69	20.6	60	15.4	39	3.9	33	22	270	32	29.76			29.70	FM-15	0.00	29.70
14	2153	7	CLR:00	10.00		67	19.4	58	14.4	38	3.3	35	22	260	32	29.75	0	-0.01	29.69	FM-15	0.00	29.69
14	2253	7	CLR:00	10.00		67	19.4	58	14.4	39	3.9	36	17	270	25	29.76			29.70	FM-15	0.00	29.70
14	2353	7	CLR:00	10.00		67	19.4	58	14.4	39	3.9	36	16	270		29.74			29.69	FM-15	0.00	29.68

FIGURE B-27 EL CENTRO NAF (KNJK) QCLCD DATA

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: -42 ft. Lat: 32.8167° N Lon: -115.6833° W
Station: EL CENTRO NAF, CA US WBAN:23199

Local Climatological Data Hourly Observations April 2016

Generated on 05/24/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Visi- bility	Weather Type (see documentation)	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Alti- meter Setting (inHg)
						(F)	(C)	(F)	(C)	(F)	(C)											
14	0056	7	CLR:00	10.00	AU AW MW	70	21.1	61	15.9	41	5.0	35	13	260		29.90	8	+0.02	29.90	FM-15	0.00	29.86
14	0156	7	CLR:00	10.00		65	18.3	56	13.4	41	5.0	42	10	290		29.89			29.90	FM-15	0.00	29.85
14	0256	7	CLR:00	10.00									16	250		29.89			29.90	FM-15	0.00	29.85
14	0356	7	CLR:00	10.00									17	280		29.88	8	+0.01	29.89	FM-15	0.00	29.84
14	0456	7	FEW:02 280	10.00		69	20.6	61	15.9	34	1.1	27	17	280		29.88			29.88	FM-15	0.00	29.84
14	0556	7	FEW:02 280	10.00		67	19.4	59	15.0	31	-0.6	26	10	240		29.89			29.90	FM-15	0.00	29.85
14	0656	7	BKN:07 280	10.00		72	22.2	63	17.4	36	2.2	27	7	310		29.90	3	-0.02	29.91	FM-15	0.00	29.86
14	0756	7	BKN:07 280	10.00		76	24.4	72	22.0	27	-2.8	16	8	310		29.91			29.92	FM-15	0.00	29.87
14	0856	7	BKN:07 280	10.00		80	26.7	79	25.9	25	-3.9	13	9	320		29.91			29.91	FM-15	0.00	29.87
14	0956	7	BKN:07 280	10.00		81	27.2	77	24.9	31	-0.6	16	7	VRB		29.90	8	+0.01	29.90	FM-15	0.00	29.86
14	1056	7	BKN:07 280	10.00		84	28.9	84	28.8	27	-2.8	12	0	000		29.86			29.86	FM-15	0.00	29.82
14	1156	7	BKN:07 280	10.00		89	31.7	92	33.2	28	-2.2	11	3	070		29.82			29.83	FM-15	0.00	29.78
14	1256	7	BKN:07 280	10.00		91	32.8	103	39.5	19	-7.2	7	14	270	23	29.79	6	+0.10	29.80	FM-15	0.00	29.75
14	1356	7	BKN:07 280	10.00		91	32.8	97	36.1	26	-3.3	9	26	240	32	29.77			29.78	FM-15	0.00	29.73
14	1456	7	SCT:04 280	10.00		90	32.2	89	31.7	34	1.1	14	24	240	29	29.75			29.75	FM-15	0.00	29.71
14	1556	7	FEW:02 280	10.00		86	30.0	81	27.2	37	2.8	18	26	240	36	29.74	6	+0.06	29.74	FM-15	0.00	29.70
14	1656	7	FEW:02 280	10.00		83	28.3	78	25.4	35	1.7	18	29	240	33	29.74			29.75	FM-15	0.00	29.70
14	1756	7	FEW:02 280	10.00		77	25.0	68	20.2	39	3.9	26	30	250		29.75			29.75	FM-15	0.00	29.71
14	1856	7	FEW:02 280	10.00		73	22.8	64	17.8	38	3.3	28	29	260		29.75	1	-0.01	29.75	FM-15	0.00	29.71
14	1956	7	FEW:02 280	10.00		70	21.1	61	16.1	37	2.8	30	26	260	34	29.76			29.77	FM-15	0.00	29.72
14	2056	7	SCT:04 280	10.00		68	20.0	59	15.0	38	3.3	33	24	260		29.77			29.78	FM-15	0.00	29.73
14	2156	7	SCT:04 280	10.00		66	18.8	57	13.9	37	2.8	35	28	260		29.76	0	-0.02	29.77	FM-15	0.00	29.72
14	2256	7	CLR:00	10.00									22	260	31	29.76			29.77	FM-15	0.00	29.72
14	2356	7	CLR:00	10.00									23	250		29.74			29.75	FM-15	0.00	29.70